Navy Advancement Center
Web site: http://www.advancement.cnet.navy.mil/

Advancement Handbook for Aviation Electronics Technician (Organizational Maintenance)

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PREFACE

The purpose of the Advancement Handbook is to help you focus your preparation for Navywide advancement-in-rating examinations. The bibliographies (BIBs) together with this handbook form a comprehensive examination study package. Since this handbook provides skill and knowledge components for each paygrade of the Aviation Electronics Technician (ATO) rating, it helps you concentrate your study on those areas that may be tested. This feature will help you get the most out of your study time.

Each page in Parts 1 through 4 of this Advancement Handbook presents general skill areas, specific skill areas, the knowledge factors associated with each skill area, the pertinent references that address each skill, and the subject areas that may be covered on the examination. The skill statements describe the skills you are expected to perform for each paygrade. The skill statements are cumulative; that is, you are responsible for the skills for the paygrade you are competing for, your present paygrade, and all paygrades below.

Although this handbook is very comprehensive, it cannot cover all the tasks performed in the rating. As a result, the advancement examinations may contain questions more detailed than described in the "*Exam Expectations"* section of the skill areas.

Remember that advancement competition is keen, so your keys to advancement include not only comprehensive advancement examination study but also sustained superior performance.

NOTE

Many of the NAVEDTRA course numbers have been changed; however, the material is **NOT** new or revised. The course numbers have been changed only to facilitate the shift to central enrollment.

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Part 1

Advancement Handbook for ATO3

Advancement Handbook for ATO3

General AT0 *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain automatic carrier landing systems (ACLS)
Knowledge you should have to perform this skill:	• Theory of operation of ACLS • Operating parameters of ACLS
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 1 (Organizational), Chapter 9 (NAVEDTRA 12331)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of ACLS. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation and operating parameters on ACLS to include mode 1, mode II, and mode III.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain attitude heading reference systems (AHRS)
Knowledge you should have to perform this skill:	• Theory of operation of AHRS • Operating parameters of AHRS
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electrician's Mate 3 & 2, Chapter 7 (NAVEDTRA 10348-G) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of AHRS. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation and operating parameters of AHRS.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain control indicator systems
Knowledge you should have to perform this skill:	• Theory of operation of control indicator systems • Operating parameters of control indicator systems
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Navy Electricity and Electronics Training Series, Module 15, Chapters 1, 2, and 4 (NAVEDTRA 14187) • Aviation Electronics Technician 3, Chapter 3 (NAVEDTRA 12329)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of control indicator systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the basic theory of operation and operating parameters of synchros and servomechanisms.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain cryptologic systems
Knowledge you should have to perform this skill:	• Theory of operation of cryptologic systems • Operating parameters of cryptologic systems • Location of modules of cryptologic systems
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Navy Electricity and Electronics Training Series, Module 17, Chapter 3 (NAVEDTRA 14189)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of cryptologic systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation of cryptologic systems, operating parameters of cryptologic systems, and the location of modules on cryptologic systems.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain data bus lines
Knowledge you should have to perform this skill:	• Theory of operation of data bus lines • Operating parameters of data bus lines • Methods of transmitting digital data
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of data bus lines. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation of data bus lines, operating parameters of data bus lines, and the methods of transmitting digital data on data bus lines.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain data display and video recorder systems
Knowledge you should have to perform this skill:	• Theory of operation of data display and video recorder systems • Operating parameters of data display and video recorder systems
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 6, Chapters 1 through 3 (NAVEDTRA 14178) • Navy Electricity and Electronics Training Series, Module 7, Chapters 1 through 4 (NAVEDTRA 14179) • Navy Electricity and Electronics Training Series, Module 8, Chapters 1 through 3 (NAVEDTRA 14180)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of data display and video recorder systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation and operating parameters of data display and video recorder systems to include cathode-ray tubes (CRTs), amplifiers, power supplies, and other solid-state devices.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain data link systems
Knowledge you should have to perform this skill:	• Theory of operation of data link systems • The interface structure between participating units of a data link system • The operating features of participating units of a data link system
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 17, Chapter 5 (NAVEDTRA 14189)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of data link systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation of data link systems, recognizing the interface structure between participating units of a data link system, and the operating features of participating units of a data link system.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain undersea warfare (USW) systems
Knowledge you should have to perform this skill:	• Theory of operation of USW systems • Operating parameters of USW systems • Factors that affect the behavior of a sound beam in water
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 22, Chapter 2 (NAVEDTRA 14194) • Navy Electricity and Electronics Training Series, Module 23, Chapters 1 through 8 (NAVEDTRA 14195)

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of acoustic processing systems, directional low-frequency analyzer and recording (DIFAR) systems, single advanced signal processor (SASP) systems, pulse analyzer systems, sonobuoy receiver sets, on top position indicator (OTPI) systems, sonobuoy reference systems, sound recorder and producer sets, and magnetic anomaly detection (MAD) sets of USW systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation and operating parameters of USW systems. In addition, you will be questioned on identifying factors that affect the behavior of a sound beam in water.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain digital data systems
Knowledge you should have to perform this skill:	• Theory of operation of digital data and digital data recording systems • Operating parameters of digital data and digital data recording systems • Programming steps in computer program development
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 4 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 13, Chapters 1 through 3 (NAVEDTRA 14185) • Navy Electricity and Electronics Training Series, Module 22, Chapters 1 through 4 (NAVEDTRA 14194)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of digital data and digital data recording systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation of digital data systems, operating parameters of digital data systems, and identifying programming steps in computer program development. In addition, you will be questioned on the fundamental concepts of number systems, Boolean algebra, and logic circuits.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain weapon control systems
Knowledge you should have to perform this skill:	• Theory of operation of weapon control systems • Operating parameters of weapon control systems • Fighter aircraft weapons systems and their operating functions
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of weapon control systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation of weapon control systems, operating parameters of weapon control systems, and recognizing various fighter aircraft weapons systems and their operating functions.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain fire control radar systems
Knowledge you should have to perform this skill:	• Theory of operation of fire control radar systems • Operating parameters of fire control radar systems • Operating modes and system controls used in fire control radar
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 18, Chapters 1 through 4 (NAVEDTRA 14190)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of fire control radar systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation of fire control radar systems, operating parameters of fire control radar systems, and recognizing operating modes and system controls used in fire control radar systems. In addition, you will be questioned on components and operating fundamentals of a television camera system and cockpit television system.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain indicators
Knowledge you should have to perform this skill:	• Theory of operation of indicators • Operating parameters of indicators • Types of heading indicators and their primary functions • Components and functions of a non-heads-up display unit (NON-HUD) tactical display system • Components and operating fundamentals of a television system
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of indicators. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation of indicators, operating parameters of indicators, and identifying the types of heading indicators and their primary functions. In addition, you will be questioned on components and functions of a tactical display system and heads-up display (HUD) system.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain navigation systems
Knowledge you should have to perform this skill:	• Theory of operation of navigation systems • Operating parameters of navigation systems • Location of modules of navigation systems
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Aviation Electrician's Mate 3 & 2, Chapter 7 (NAVEDTRA 10348-G) • Navy Electricity and Electronics Training Series, Module 10, Chapters 1 through 4 (NAVEDTRA 14182) • Navy Electricity and Electronics Training Series, Module 15, Chapter 3 (NAVEDTRA 14187)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance on automatic direction finder (ADF), Doppler, VHF omni-directional range (VOR), tactical air navigation system (TACAN), radar altimeter, global positioning system (GPS), radar beacon, and glide slope navigation systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation and operating parameters of navigation systems.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain communication systems
Knowledge you should have to perform this skill:	• Theory of operation of communication systems • Operating parameters of communication systems • Various frequency bands and their uses and limitations • General information on fiber optics and optical fibers
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 12, Chapter 1 (NAVEDTRA 14184) • Navy Electricity and Electronics Training Series, Module 17, Chapters 1 through 5 (NAVEDTRA 14189) • Navy Electricity and Electronics Training Series, Module 24, Chapters 1 through 8 (NAVEDTRA 14196)

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of high frequency (HF), ultra high frequency (UHF), very high frequency (VHF) radio sets and interior communication (IC) systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on theory of operation and operating parameters of radio sets and IC systems, general information on fiber optics, and identifying the various frequency bands and their uses and limitations. In addition, you will be questioned on the amplitude, phase, frequency, and wavelength of a sine wave.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain identification friend or foe (IFF) systems
Knowledge you should have to perform this skill:	• Theory of operation of IFF systems • Operating parameters of IFF systems • Components of IFF systems
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of IFF systems. Questions will be of a general nature or specific to a certain piece of equipment. You will also be questioned on theory of operation and operating parameters of IFF systems. In addition, you will be questioned on the five modes of IFF operation used by the air traffic control radar beacon system (ATCRBS) and naval aircraft-mode 1, mode 2, mode 3/A, mode C, and mode 4.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain infrared and laser systems
Knowledge you should have to perform this skill:	• Theory of operation of infrared and laser systems • Operating parameters of infrared and laser systems • Identify infrared advantages and remote sensing types
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapters 2 and 9 (NAVEDTRA 12329)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of infrared, forward looking infrared (FLIR), night vision systems, and laser systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation and operating parameters of infrared and laser systems. In addition, you will be questioned on infrared advantages and remote sensing types. Furthermore, you will be questioned on identifying the principles of optics and lasers to include terms, theory, and the particle theory of light.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain integrated electronics systems
Knowledge you should have to perform this skill:	• Theory of operation of integrated electronics systems • Operating parameters of integrated electronics systems • Peripheral avionics systems and their interaction with computers • Various logic circuitry used in computers and their functions and outputs
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapters 4 and 5 (NAVEDTRA 12329)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of integrated electronics systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation and operating parameters of integrated electronics systems. You may also be questioned about peripheral avionics systems and their interaction with computers. In addition, you will be questioned about logic circuitry used in computers and their functions and outputs.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain electronic countermeasures (ECM), electronic support measures (ESM), and threat indicator systems
Knowledge you should have to perform this skill:	• Theory of operation of ECM and ESM systems • Operating parameters of ECM and ESM systems • Identifying various types of deception and jamming devices used in ECM and recognize their characteristics.
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of ECM and ESM systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation, operating parameters, and classes of indicators, panoramic adapters, digital display indicators, and pulse analyzers. Furthermore, you will be questioned on identifying various types of deception and jamming devices used in ECM and recognize their characteristics.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain search radar systems
Knowledge you should have to perform this skill:	• Theory of operation of search radar systems • Operating parameters of search radar systems • Characteristics of radar to include range, resolution, azimuth, and accuracy • Factors that affect radar performance • Components of a pulse-modulated radar and functions of the components within the system
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 11, Chapters 1 through 3 (NAVEDTRA 14183) • Navy Electricity and Electronics Training Series, Module 18, Chapters 1 through 4 (NAVEDTRA 14190)

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of search radar systems. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation, the operating parameters, and the characteristics of radar to include range, resolution, azimuth, and accuracy. In addition, you will be questioned on the factors that affect radar performance, the components of a pulse-modulated radar, and the functions of the components within the system.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain survival beacons
Knowledge you should have to perform this skill:	• Theory of operation of survival beacons • Operating parameters of survival beacons
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 5 (NAVEDTRA 12329)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of survival beacons. Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation, the operating parameters, and the functions and operating principles of survival beacons.

General ATO *Skill Area*	**Avionics Systems Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain general purpose electronic test equipment (GPETE)
Knowledge you should have to perform this skill:	• Theory of operation of general purpose electronic test equipment (GPETE) • Operating parameters of general purpose electronic test equipment (GPETE) • Interpreting avionics drawings, schematics, and test equipment of general purpose electronic test equipment (GPETE) • General information on circuit protection, control, and measurement of general purpose electronic test equipment (GPETE) • Commonly used test equipment and the applications of general purpose electronic test equipment (GPETE)
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 8 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 3, Chapters 1 through 3 (NAVEDTRA 14175) • Navy Electricity and Electronics Training Series, Module 16, Chapters 1 through 6 (NAVEDTRA 14188) • Navy Electricity and Electronics Training Series, Module 21, Chapters 1 through 5 (NAVEDTRA 14193)

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the maintenance of general purpose electronic test equipment (GPETE). Questions will be of a general nature or specific to a certain type of equipment. You will also be questioned on the theory of operation of GPETE, operating parameters of GPETE, and interpreting avionics drawings, schematics, and test equipment. In addition, you will be questioned on circuit protection, control, and measurement. Furthermore, you will be asked questions on the calibration and repair procedures associated with (GPETE).

General ATO *Skill Area*	**Electrical and Electronic Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Measure voltage, current, and resistance
Knowledge you should have to perform this skill:	• Theory of matter, energy, and electricity • Circuit control and protection devices • Interpretation of charts, diagrams, and schematics
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapters 1, 7, and Appendix II (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 1, Chapters 1 and 3 (NAVEDTRA 14173) • Navy Electricity and Electronics Training Series, Module 2, Chapters 1 through 5 (NAVEDTRA 14174) • Navy Electricity and Electronics Training Series, Module 3, Chapters 1 through 3 (NAVEDTRA 14175) • Navy Electricity and Electronics Training Series, Module 4, Chapter 1 through 3 (NAVEDTRA 14176) • Navy Electricity and Electronics Training Series, Module 7, Chapters 1 through 4 (NAVEDTRA 14179) • Navy Electricity and Electronics Training Series, Module 8, Chapters 1 through 3 (NAVEDTRA 14180) • Navy Electricity and Electronics Training Series, Module 16, Chapters 1 through 6 (NAVEDTRA 14188)

	• Navy Electricity and Electronics Training Series, Module 19, Chapter 1 (NAVEDTRA 14191)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about calculating voltage, current, and resistance using Ohm's law. Questions will be of a general nature or specific to a certain type of circuit. You will also be questioned on physics, matter, electricity, energy, magnetism, and interpreting charts, diagrams, schematics, and electronic component color-coding.

General ATO *Skill Area*	**Electrical and Electronic Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Perform waveform analysis
Knowledge you should have to perform this skill:	• Wave shapes • Operating procedures of oscilloscopes, frequency-domain reflectometry (FDR) and time-domain reflectometry (TDR)
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 8 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 6, Chapters 1 through 3 (NAVEDTRA 14178) • Navy Electricity and Electronics Training Series, Module 9, Chapters 1 through 4 (NAVEDTRA 14181) • Navy Electricity and Electronics Training Series, Module 16, Chapter 2 (NAVEDTRA 14188) • Navy Electricity and Electronics Training Series, Module 21, Chapters 1 through 5 (NAVEDTRA 14193)

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on maintaining aircraft wiring, transmission lines, and antenna systems. Questions will be of a general nature or specific to a certain type of circuit. You will also be questioned on wave shape characteristics of resistive and reactive loads. In addition, you will be questioned on the operating procedures for oscilloscopes, FDR, and TDR. Furthermore, you will be questioned on time, phase, frequency, and amplitude of observed waveforms.

General ATO *Skill Area*	**Electrical and Electronic Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Comply with electrostatic discharge sensitive (ESDS) program
Knowledge you should have to perform this skill:	• Identification of ESDS devices • Procedures for maintaining ESDS safe areas • Hazards to ESD-sensitive devices • Handling and packaging techniques
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 6 (NAVEDTRA 12329) • Avionic Cleaning and Corrosion Prevention/Control, Chapter 9 (NAVAIR 16-1-540) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapter 22 (OPNAVINST 4790.2) • Navy Electricity and Electronics Training Series, Module 14, Chapter 3 (NAVEDTRA 14186) • Navy Electricity and Electronics Training Series, Module 21, Chapter 2 (NAVEDTRA 14193) • Standard Maintenance Practices Miniature/Microminiature (2M) Electronic Assembly Repair, Work Package 005 (NAVAIR 01-1A-23)

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the ESDS program. Questions will be of a general nature or specific to a certain procedure. You will also be questioned on ESDS devices and procedures for maintaining ESDS safe areas. In addition, you will be questioned on the hazards to ESD-sensitive devices and proper handling and packaging techniques.

General ATO *Skill Area*	**Electrical and Electronic Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain electronic magnetic interference (EMI) components
Knowledge you should have to perform this skill:	• Identification of EMI sources and their effect on electronic circuits • EMI shielding principles and practices • Effects of corrosion on EMI components • Procedures for maintaining EMI components
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 6 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 10, Chapter 2 (NAVEDTRA 14182) • Navy Electricity and Electronics Training Series, Module 17, Chapter 3 (NAVEDTRA 14189) • Avionic Cleaning and Corrosion Prevention/Control, Chapter 8 (NAVAIR 16-1-540)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about EMI sources, and its effect on avionic equipment. Questions will be of a general nature. You will also be questioned on principles and practices, corrosion control, and maintenance of EMI components.

General ATO *Skill Area*	**Electrical and Electronic Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain aircraft electric and electronic wiring
Knowledge you should have to perform this skill:	• Techniques for installing, repairing, and maintaining aircraft electrical wiring • Bonding and grounding procedures
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Installation Practices Aircraft Electric and Electronic Wiring, Work Package 003 (NAVAIR 01-1A-505) • Aviation Electronics Technician 3, Chapters 6 and 7 (NAVEDTRA 12329)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the techniques used for installing, repairing, and maintaining aircraft electric and electronic wiring. Questions will be of a general nature. You will also be questioned on bonding and grounding procedures.

General ATO *Skill Area*	**Electrical and Electronic Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Maintain aircraft antenna systems
Knowledge you should have to perform this skill:	• Techniques for troubleshooting, removing, repairing and installing, aircraft antennas and antenna systems
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Installation Practices Aircraft Electric and Electronic Wiring, Work Package 003 (NAVAIR 01-1A-505) • Aviation Electronics Technician 3, Chapters 6 and 7 (NAVEDTRA 12329) • Navy Electricity and Electronics Training Series, Module 10, Chapters 1 through 4 (NAVEDTRA 14182)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the techniques used for installing, repairing, and maintaining aircraft antennas and antenna systems. Questions will be of a general nature. You will also be questioned on antenna types and operating parameters.

General ATO *Skill Area*	**Electrical and Electronic Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Comply with the corrosion prevention and control program
Knowledge you should have to perform this skill:	• Corrosion theory • Preventive maintenance program • Inspection and corrosion prone areas • Corrosion removal and surface treatment • Treatment of specific area • Emergency procedures
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Avionic Cleaning and Corrosion Prevention/Control, Chapters 1 through 10 (NAVAIR 16-1-540) • Aircraft Weapons System Cleaning and Corrosion Control, Chapters 1 through 9 (NAVAIR 01-1A-509) • Aviation Maintenance Ratings, Chapter 4 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapter 14 (OPNAVINST 4790.2)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the corrosion prevention and control program. Questions will be of a general nature. You will also be questioned on the theory of corrosion, preventative maintenance, inspections, removal, and treatment. In addition, you will be asked questions about emergency procedures.

Advancement Handbook for ATO3

General ATO *Skill Area*	**Quality Assurance**
A *skill* you are expected to perform from the General Skill Area above:	Conduct aircraft inspections required for proper maintenance and safety of naval aircraft
Knowledge you should have to perform this skill:	• Inspection requirements for the following inspections: - Periodic - Acceptance - Transfer - Conditional - Phase - Special - Zonal - Daily - Preflight - Postflight - Turnaround
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Aviation Maintenance Ratings, Chapter 5 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume I, Chapters 12, 13, 16, and Appendix C (OPNAVINST 4790.2) • Applicable maintenance requirement cards (MRCs)

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about aircraft and engine inspection procedures, requirements, and responsibilities. Questions will be of a general nature or specific to a type of inspection. In addition, you will be questioned on the logbook requirements for each type of inspection.

General ATO *Skill Area*	**Quality Assurance**
A *skill* you are expected to perform from the General Skill Area above:	Comply with foreign object damage and tool control programs
Knowledge you should have to perform this skill:	• Purpose and scope of foreign object damage and tool control programs
References you should study to gain the knowledge you need to perform this skill:	• Aviation Maintenance Ratings, Chapter 5 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapters 12 and 13 (OPNAVINST 4790.2)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the purpose and scope of foreign object damage and tool control programs. Questions will be of a specific nature. You will also be questioned on tool control inventories, identification markings, inspecting tool containers, and searching for missing tools. In addition, you will be questioned on preparing missing and broken tool reports.

General ATO *Skill Area*	**Logistics/Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	Maintain individual material readiness list (IMRL):
Knowledge you should have to perform this skill:	• Sections of the IMRL and their purposes
References you should study to gain the knowledge you need to perform this skill:	• Aviation Maintenance Ratings, Chapter 3 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume I, Chapters 10 and 15 (OPNAVINST 4790.2)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the five major sections of the IMRL and their purposes. Questions will be of a general nature.

General ATO *Skill Area*	**Logistics/Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	Maintain hazardous material (HAZMAT)
Knowledge you should have to perform this skill:	• Content of hazardous materials information system (HMIS) and hazardous material user guide (HMUG) • Procedures for handling and storage of HAZMAT • Requirements for labeling HAZMAT • Inspection requirements for HAZMAT • Disposal procedures for HAZMAT • Use and contents of Material Safety Data Sheets (MSDS)
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapter 20 (OPNAVINST 4790.2) • Hazardous materials users guide (HMUG), Introduction, Groups 1 through 7, 9, 11, and 12 • Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat, Volume I, Chapter B3 (OPNAVINST 5100.19) • Navy Occupational Safety and Health (NAVOSH) Program Manual, Chapter 7 (OPNAVINST 5100.23)

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the HAZMAT program. Question will be of a general nature. You will also be questioned about the use, storage, disposal, labeling, and inspection requirements of HAZMAT. In addition, you will be questioned on the use and contents of MSDSs.

General ATO *Skill Area*	**Logistics/Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	Document maintenance actions on naval aviation logistics command management information systems (NALCOMIS)
Knowledge you should have to perform this skill:	• Identification of parts and assemblies by using maintenance manuals, illustrated parts breakdowns (IPBs), supply catalogs, and other documentation tools • Definitions of maintenance action form (MAF) data elements
References you should study to gain the knowledge you need to perform this skill:	• Aviation Maintenance Ratings, Chapters 1 and 2 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume III, Chapter 5 (OPNAVINST 4790.2)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on initiating a maintenance action form (MAF). Questions will be of a general nature or specific to a type of maintenance action. You will also be questioned on documentation tools used to identify parts and assemblies. In addition, you will be questioned on definitions of MAF data elements.

Part 2

Advancement Handbook for ATO2

General ATO *Skill Area*	**Electrical and Electronic Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Monitor installation of avionics field changes/modifications
Knowledge you should have to perform this skill:	• Technical Directive (TD) compliance and documentation
References you should study to gain the knowledge you need to perform this skill:	• Naval Aviation Maintenance Program (NAMP), Volume I, Chapter 10 (OPNAVINST 4790.2) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapters 8 and 11 (OPNAVINST 4790.2) • Aviation Maintenance Ratings, Chapter 7 (NAVEDTRA 12017)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on TD compliance and documentation. Questions will be of a general nature. You will also be questioned on the different sections of the aircraft logbook and their purposes.

General ATO *Skill Area*	**Electrical and Electronic Maintenance**
A *skill* you are expected to perform from the General Skill Area above:	Monitor avionics corrosion control programs
Knowledge you should have to perform this skill:	• Corrosion theory • Preventive maintenance program • Inspection and corrosion prone areas • Corrosion removal and surface treatment • Treatment of specific areas • Emergency procedures • Audit procedures
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Avionic Cleaning and Corrosion Prevention/Control, Chapters 1 through 10 (NAVAIR 16-1-540) • Aircraft Weapons System Cleaning and Corrosion Control, Chapters 1 through 9 (NAVAIR 01-1A-509) • Aviation Maintenance Ratings, Chapter 4 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapters 8 and 14 (OPNAVINST 4790.2)

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the corrosion prevention and control program. Questions will be of a general nature. You will also be questioned on the theory of corrosion, preventative maintenance, inspections, corrosion removal and treatment. In addition, you will be asked questions about emergency procedures and requirements for evaluating the avionics corrosion control program.

General ATO *Skill Area*	**Quality Assurance**
A *skill* you are expected to perform from the General Skill Area above:	Prepare special reports
Knowledge you should have to perform this skill:	• Requirements for preparing reports under the Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP)
References you should study to gain the knowledge you need to perform this skill:	• Naval Aviation Maintenance Program (NAMP), Volume V, Chapter 10 (OPNAVINST 4790.2) • Aviation Maintenance Ratings, Chapter 6 (NAVEDTRA 12017)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on special reports dealing with responsibilities and requirements for reporting the following: substandard workmanship, improper QA procedures, and deficiencies in material and publications. Questions will be of a general nature or specific to a type of report.

General ATO *Skill Area*	**Quality Assurance**
A *skill* you are expected to perform from the General Skill Area above:	Monitor aircraft daily inspections
Knowledge you should have to perform this skill:	• Inspection requirements • Documentation requirements
References you should study to gain the knowledge you need to perform this skill:	• Naval Aviation Maintenance Program (NAMP), Volume I, Chapter 12 (OPNAVINST 4790.2) • Aviation Maintenance Ratings, Chapter 5 (NAVEDTRA 12017) • Applicable maintenance requirement cards (MRCs) • Applicable maintenance instruction manuals (MIMs)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about aircraft and engine inspection procedures, intervals, and documentation requirements for each type of inspection. Questions will be of a general nature.

General ATO *Skill Area*	**Quality Assurance**
A *skill* you are expected to perform from the General Skill Area above:	Update individual material readiness list (IMRL)
Knowledge you should have to perform this skill:	• The sections of the IMRL and their purposes • Procedures and requirements for updating the IMRL
References you should study to gain the knowledge you need to perform this skill:	• Aviation Maintenance Ratings, Chapter 3 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume I, Chapter 10 (OPNAVINST 4790.2)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the five major sections of the IMRL and their purposes. Questions will be of a general nature. You will also be questioned on different types of transactions, reporting procedures, updating procedures, and inventories.

General ATO *Skill Area*	**Logistics/Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	Review maintenance data systems (MDS) reports
Knowledge you should have to perform this skill:	• Procedures for reviewing MDS reports • Contents of all Maintenance Data Reports (MDRs)
References you should study to gain the knowledge you need to perform this skill:	• Naval Aviation Maintenance Program (NAMP), Volume III, Chapter 3 (OPNAVINST 4790.2) • Aviation Maintenance Ratings, Chapter 1 (NAVEDTRA 12017)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on reviewing MDS reports. Questions will be of a general nature or specific to a certain procedure. You also will be questioned about the contents of these reports and their use.

General ATO *Skill Area*	**Logistics/Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	Inspect hazardous material (HAZMAT) storage areas
Knowledge you should have to perform this skill:	• Content of Hazardous Materials Information System (HMIS) and Hazardous Material User Guide (HMUG) • Procedures for handling and storage of HAZMAT • Requirements for labeling HAZMAT • Inspection requirements for HAZMAT • Disposal procedures for HAZMAT • Use and contents of Material Safety Data Sheets (MSDS) • Quality assurance (QA) audit program
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapters 8 and 20 (OPNAVINST 4790.2) • Hazardous Material User Guide (HMUG) • Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat, Volume I, Chapter B3 (OPNAVINST 5100.19) • Navy Occupational Safety and Health (NAVOSH) Program Manual, Chapter 7 (OPNAVINST 5100.23)

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the HAZMAT program. Questions will be of a general nature. You will also be questioned about the use, storage, disposal, labeling, and inspection requirements of HAZMAT. In addition, you will be questioned on the use and contents of MSDSs. Furthermore, you will be questioned on audit procedures for HAZMAT.

Part 3

Advancement Handbook for ATO1

General ATO *Skill Area*	**Quality Assurance**
A *skill* you are expected to perform from the General Skill Area above:	Perform collateral duty inspections (CDI)
Knowledge you should have to perform this skill:	• CDI certification process • Procedures for receiving/screening inspections • Procedures for performing in-process inspections • Procedures for performing final inspections
References you should study to gain the knowledge you need to perform this skill:	• Applicable maintenance instruction manuals (MIMs) • Applicable maintenance requirement cards (MRCs) • Aviation Maintenance Ratings, Chapter 6 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume I, Chapter 14 (OPNAVINST 4790.2)

General ATO *Skill Area*	**Quality Assurance**
A *skill* you are expected to perform from the General Skill Area above:	Monitor foreign object damage (FOD), electrostatic discharge sensitive (ESDS), and individual material readiness list (IMRL) programs
Knowledge you should have to perform this skill:	• Purpose and scope of FOD • Purpose and scope of IMRL • Identification of ESDS devices • Procedures for maintaining ESDS safe areas • Recognizing the hazards to ESD-sensitive devices to include proper handling and packaging techniques
References you should study to gain the knowledge you need to perform this skill:	• Aviation Maintenance Ratings, Chapters 3 and 5 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume I, Chapter 10 (OPNAVINST 4790.2) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapters 12 and 22 (OPNAVINST 4790.2) • Applicable maintenance instruction manuals (MIMs) • Aviation Electronics Technician 3, Chapter 6 (NAVEDTRA 12329) • Aviation Electronics Technician 1(O), Chapter 10 (NAVEDTRA 12331) • Navy Electricity and Electronics Training Series, Module 21, Chapter 2 (NAVEDTRA 172-21-00-98) • Avionic Cleaning and Corrosion Prevention/Control, Chapter 9 (NAVAIR 16-1-540)

	• Navy Electricity and Electronics Training Series, Module 14, Chapter 3 (NAVEDTRA 172-14-00-98) • Standard Maintenance Practices Miniature/Microminiature (2M) Electronic Assembly Repair, Work Package 005 (NAVAIR 01-1A-23) • Aviation Maintenance Ratings, Chapter 5 (NAVEDTRA 12017)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the purpose and scope of the FOD, IMRL, and ESDS programs. Questions will be of a general nature. You will also be questioned on the ESDS devices and the procedures for maintaining an ESDS safe area. In addition, you will be questioned on the hazards to ESD-sensitive devices to include proper handling and packaging techniques. Furthermore, you will be questioned on responsibilities and monitoring procedures for the FOD, IMRL, and ESDS programs.

General ATO *Skill Area*	**Logistics/Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	Monitor tool control program (TCP)
Knowledge you should have to perform this skill:	• Purpose and scope of TCP • Audit procedures for TCP
References you should study to gain the knowledge you need to perform this skill:	• Aviation Maintenance Ratings, Chapter 5 (NAVEDTRA 12017) • Naval Aviation Maintenance Program (NAMP), Volume V, Chapters 8, 12, 13 (OPNAVINST 4790.2)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the purpose and scope of the tool control program. Questions will be of a general nature. You will also be questioned on tool control inventories, identification markings, inspecting tool containers, and on searching for missing tools. In addition, you will be questioned on preparing missing and broken tool reports. Furthermore, you can expect questions on audit procedures for the TCP.

Part 4

Advancement Handbook for ATOC

General AT0 *Skill Area*	**Logistics/Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	Document maintenance actions on Naval Aviation Command Organizational Management Information Systems (NALCOMIS)
Knowledge you should have to perform this skill:	• NALCOMIS operating procedures • Procedures for maintenance action approval • Procedures for data input
References you should study to gain the knowledge you need to perform this skill:	• Aviation Maintenance Ratings, Chapters 1, 3 and 7 (NAVEDTRA 12017) • Naval Aviation Maintenance program (NAMP), Volume III, Chapters 1 through 7 (OPNAVINST 4790.2)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on NALCOMIS operating procedures relating to maintenance control functions. Questions will be of a general nature or specific to a certain procedure. You will also be questioned on maintenance data system (MDS) forms and procedures and definitions of MAF data elements.

General ATO *Skill Area*	**Logistics/Technical Administration**
A *skill* you are expected to perform from the General Skill Area above:	Carry out maintenance control operations
Knowledge you should have to perform this skill:	• Responsibilities of maintenance control and the maintenance divisions • Considerations for assignment of aircraft to missions • Procedures for certifying aircraft safe for flight • How to draft, update, and maintain aircraft maintenance and inspection schedules • How to draft, prepare, review and update aircraft status reports • Equipment requirements and status of equipment • Subsystem capability impact reports (SCIR) requirements • Procedures for preparation and review of requests for technical assistance • Considerations for evaluation of aircraft material conditions of combat readiness • Procedures for reviewing aircraft history records and equipment history records • Considerations for evaluation of status boards • Considerations for reviewing aircraft periodic maintenance information cards (PMIC)
References you should study to gain the knowledge you need to perform this skill:	• Aviation Maintenance Ratings, All Chapters (NAVEDTRA 12017) • Naval Aviation Maintenance program (NAMP), Volume I, Chapters 10 through 16 (OPNAVINST 4790.2) • Naval Aviation Maintenance program (NAMP), Volume V, Chapters 1-22 (OPNAVINST 4790.2)

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on maintenance control operating procedures and functions. Questions will be of a general nature or specific to a certain procedure. You will also be questioned on aircraft inspection and maintenance procedures as well as aircraft logs and records documentation.

General AT0 *Skill Area*	**Quality Assurance**
A *skill* you are expected to perform from the General Skill Area above:	Perform Quality Assurance (QA) functions
Knowledge you should have to perform this skill:	• Quality assurance program requirements • Procedures for submission of Quality Deficiency Reports (QDR), Engineering Investigations (EI), Hazardous Material Reports (HMR), and Technical Publication Deficiency Reports (TPDR) • Investigation of support equipment misuse and abuse reports
References you should study to gain the knowledge you need to perform this skill:	• Aviation Maintenance Ratings, Chapters 5 and 6 (NAVEDTRA 12017) • Naval Aviation Maintenance program (NAMP), Volume I, Chapters 10, 11, 12, 14, and 15 (OPNAVINST 4790.2) • Naval Aviation Maintenance program (NAMP), Volume V, Chapters 1 through 22 (OPNAVINST 4790.2)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on quality assurance functions. Questions will be of a general nature or specific to a certain procedure. You may also be questioned on all programs encompassed in the NAMP.

Appendix A

References Used in This Advancement Handbook

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
ATO3	HMUG	Hazardous Materials Users Guide	Introduction, Groups 1 through 7, and 9, 11, and 12	Note 5
	NAVAIR 01-1A-23	Standard Maintenance Practices Miniature/ Microminiature (2M) Electronics Assembly Repair	Work Package 005	Note 1
	NAVAIR 01-1A-505	Installation Practices Aircraft Electric and Electronic Wiring	Work Package 003	Note 1
	NAVAIR 01-1A-509	Aircraft Weapons Systems Cleaning and Corrosion Control	Chapters 1 through 9	Note 1
	NAVAIR 16-1-540	Avionic Cleaning and Corrosion and Corrosion/Prevention	Chapters 1 through 10	Note 1
	NAVEDTRA 10348-G	Aviation Electrician's Mate 3 & 2	Chapter 7	Note 4
	NAVEDTRA 12017	Aviation Maintenance Ratings	Chapters 1 through 5	Note 4
	NAVEDTRA 14028	Aviation Electronics Technician 3	Chapters 1 through 9 and Appendix II	Note 4
	NAVEDTRA 12331	Aviation Electronics Technician 1 (Organizational)	Chapter 9	Note 4
	NAVEDTRA 14173	Navy Electricity and Electronics Training Series, Module 1	Chapters 1 and 3	Note 4

	NAVEDTRA 14174	Navy Electricity and Electronics Training Series, Module 2	Chapters 1 through 5	Note 4
	NAVEDTRA 14175	Navy Electricity and Electronics Training Series, Module 3	Chapters 1 through 3	Note 4
	NAVEDTRA 14176	Navy Electricity and Electronics Training Series, Module 4	Chapters 1 through 3	Note 4
	NAVEDTRA 14178	Navy Electricity and Electronics Training Series, Module 6	Chapters 1 through 3	Note 4
	NAVEDTRA 14179	Navy Electricity and Electronics Training Series, Module 7	Chapters 1 through 4	Note 4
	NAVEDTRA 14180	Navy Electricity and Electronics Training Series, Module 8	Chapters 1 through 3	Note 4
	NAVEDTRA 14181	Navy Electricity and Electronics Training Series, Module 9	Chapters 1 through 4	Note 4
	NAVEDTRA 14182	Navy Electricity and Electronics Training Series, Module 10	Chapters 1 through 4	Note 4
	NAVEDTRA 14183	Navy Electricity and Electronics Training Series, Module 11	Chapters 1 through 3	Note 4
	NAVEDTRA 14184	Navy Electricity and Electronics Training Series, Module 12	Chapter 1	Note 4
	NAVEDTRA 14185	Navy Electricity and Electronics Training Series, Module 13	Chapters 1 through 3	Note 4
	NAVEDTRA 14186	Navy Electricity and Electronics Training Series, Module 14	Chapter 3	Note 4
	NAVEDTRA 14187	Navy Electricity and Electronics Training Series, Module 15	Chapters 1 through 4	Note 4
	NAVEDTRA 14188	Navy Electricity and Electronics Training Series, Module 16	Chapters 1 through 6	Note 4

	NAVEDTRA 14189	Navy Electricity and Electronics Training Series, Module 17	Chapters 1 through 5	Note 4
	NAVEDTRA 14190	Navy Electricity and Electronics Training Series, Module 18	Chapters 1 through 4	Note 4
	NAVEDTRA 14191	Navy Electricity and Electronics Training Series, Module 19	Chapter 1	Note 4
	NAVEDTRA 14193	Navy Electricity and Electronics Training Series, Module 21	Chapters 1 through 5	Note 4
	NAVEDTRA 14194	Navy Electricity and Electronics Training Series, Module 22	Chapters 1 through 4	Note 4
	NAVEDTRA 14195	Navy Electricity and Electronics Training Series, Module 23	Chapters 1 through 8	Note 4
	NAVEDTRA 14196	Navy Electricity and Electronics Training Series, Module 24	Chapters 1 through 8	Note 4
	OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume I	Chapters 10, 12, 13, 15, 16, and Appendix C	Note 3
	OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume III	Chapter 5	Note 3
	OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume V	Chapters 12, 13, 14, 20, and 22	Note 3
	OPNAVINST 5100.19	Naval Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat, Volume I	Chapter B3	Note 2
	OPNAVINST 5100.23	Naval Occupational Safety and Health (NAVOSH) Program Manual	Chapter 7	Note 2

ATO2	**All references listed for AT(O) 3 and the following:**			
	NAVEDTRA 12017	Aviation Maintenance Ratings	Chapters 6 and 7	Note 4
	OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume III	Chapter 3	Note 3
	OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume V	Chapters 8, 10, and 11	Note 3
ATO1	**All references listed for AT(O) 3, AT(O) 2, and the following:**			
	OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume I	Chapter 14	Note 3
ATOC	**All references listed for AT(O) 3, AT(O) 2, AT(O) 1, and the following:**			
	OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume I	Chapter 11	Note 3
	OPNAVINST 4790.2	Naval Aviation Maintenance Program (NAMP), Volume V	Chapters 1 through 7, 9, 15 through 19, and 21	Note 3

LEGEND:

Note 1 - INTERNET—http://www.natec.navy.mil/ or Central Technical Publications Library

Note 2 - INTERNET—http://neds.nebt.daps.mil/ or Central Technical Publications Library

Note 3 - INTERNET—http://greenshirt.nalda.navy.mil/ or Central Technical Publications Library

Note 4 - INTERNET—http://www.advancement.cnet.navy.mil/

> Note: This is not a new or revised course. NAVEDTRA Course Number changed ONLY to facilitate central enrollment.

Note 5 - HMC&M/HMIS CD-ROM
Letter request to:
Commanding Officer
ATTN: CD-ROM Team, Code N9113
NCTAMSLANT
9456 Fourth Avenue, Suite 215A
Norfolk, VA 23511-2199
Commercial: (804) 445-9192
DSN: 565-9192